

## ABSTRACT

A radio frequency (RF) converter system and associated method are provided for generating and/or receiving RF signals. Included is a signal conversion circuit for digital signal processing (DSP) or converting between digital signals and analog signals. Further provided is a shifting circuit in communication with the signal conversion circuit. In transmit mode, the shifting circuit is adapted for at least one of frequency shifting and phase shifting the signals, as a function of either an oscillating signal or a baseband signal to generate modulated signals. Further included are a transmit/receive port and a termination circuit in communication with shifting circuit for transmitting the modulated signals and selecting a portion of the transmitted modulated signals, respectively. Still yet, an output filter or mixer may be provided. In receive mode, the shifting circuit is adapted for receiving a non-varying DC signal from the signal conversion circuit. This DC signal serves to nullify the oscillating signal applied to the shifting circuit and provide biasing for the termination circuit. The non-varying direct current (DC) signal is combined with the incoming modulated signals from the transmit/receive port and is applied to the termination circuit. The termination circuit is adapted for generating baseband signals as a function of the applied oscillating signal. In use, a frequency associated with the oscillating signal or baseband signal, a frequency associated with the termination circuit, a frequency corresponding to a clock associated with the signal conversion circuit, and a frequency associated with a master clock are integer multiples of each other.